

38. The servicing fluid of claim 37 wherein the aphrons comprise less than about 11% by volume of the fluid.

39. The servicing fluid of claim 37 wherein the aphrons comprise less than about 6.5% by volume of the fluid.

40. The servicing fluid of claim 16 wherein the aphrons prevent loss of excess servicing fluid in a formation.

41. The servicing fluid of claim 16 wherein the aphrons effectively seal a formation.

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A marked-up version of the new claims and the changes to the pending amended claims, showing the changes by underlining of the added text and bracketing of the deleted text, is appended hereto.

#### REMARKS

Applicant acknowledges receipt of the Office Action dated December 5, 2002, in which the Examiner rejected claims 1-21. For the reasons set forth below, Applicant respectfully submits that all of the claims (including the amended claims and new claims 22-41) are allowable.

#### **I. OBVIOUSNESS-TYPE DOUBLE PATENTING**

In paragraphs 4 - 6 of the Office Action, claims 1-21 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over certain claims of U.S. Patent No. 6,148,917 and co-pending Application 09/246,932. Terminal disclaimers with respect to the '917 patent and the co-pending application are enclosed. Also enclosed are three assignment contracts. As shown by the assignments, the present application and U.S. Patent No. 6,148,917 and application 09/246,932 are commonly owned by MASI Technologies, L.L.C. With the filing of the terminal disclaimers, the obviousness-type double patenting rejection is overcome.

The fee for the terminal disclaimers is enclosed herewith. Please charge any extra fees or credit any overpayments to Deposit Account No. 03-2769.

## **II. THE NEW CLAIMS ARE PATENTABLE**

Applicant has added new claims 22-41. These claims are supported by application serial no. 08/800,727 (filed February 13, 1997), which issued as U.S. Patent No. 5,881,826. The present application is a divisional of application serial no. 09/320,375 (issued as U.S. Patent No. 6,390,208), which is a continuation of application no. PCT/US98/02566 (filed February 10, 1998), which is a continuation of the '826 patent. (*See* face of the '208 patent). The specification has been amended to reflect this family of patents/applications. Applicant respectfully submits that the new claims are patentable and should be allowed.

## **III. THE SECTION 102 REJECTIONS**

In paragraph 2 of the Office Action, claims 1-21 were rejected under 35 U.S.C. §102(a) and (b) as being anticipated by the drilling fluid systems disclosed in the declaration filed in application serial no. 09/246,932. The previously-filed declaration states that certain drilling fluid systems were sold and used in the United States before February 9, 1998. To overcome this rejection, Applicant submits the declaration of Tommy F. Brookey, the named inventor.

As set forth in the attached declaration of Mr. Brookey, the drilling fluid systems referenced in the previous declaration (submitted in 09/246,932) were not sold and/or used in the United States prior to February 13, 1996. Because all of the pending claims are fully supported by the original application serial no. 08/800,727 (filed February 13, 1997), the claims have an effective filing date of February 13, 1997. The critical date, therefore, is February 13, 1996. In view of Mr. Brookey's affidavit, the systems disclosed in the previous declaration are not prior art under 102(b) (because they were not sold/used before February 13, 1996). Additionally, the

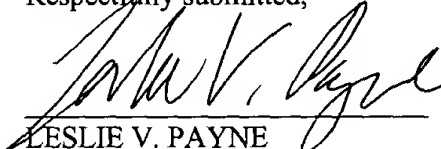
systems disclosed in the previous declaration are not prior art under 102(a) because those systems were sold/used by the inventor's company (not "by others"). For all these reasons, Applicant respectfully submits that it has overcome the rejection in paragraph 2 of the Office Action.

In paragraph 3 of the Office Action, claims 14 and 16 were rejected under 35 U.S.C. §102(b) as being anticipated by *Sebba*. Applicant respectfully disagrees with the Examiner's statement that the claimed intended use as a drilling or servicing fluid does not distinguish over *Sebba* (which does not teach or suggest using aphrons in drilling or servicing fluids). However, in the interest of expediting the issuance of a patent, Applicant has amended independent claims 14 and 16 to include a viscosifier that creates a low shear rate viscosity in the fluid. This amendment makes clear that claims 14 and 16 claim a drilling or servicing fluid which is not taught by *Sebba*. Thus, Applicant respectfully submits that claims 14 and 16 are allowable.

#### IV. CONCLUSION

This response to the Office Action of December 5, 2002 has addressed the Examiner's rejections. For the reasons stated above, all claims are in condition for allowance and such favorable action is respectfully requested. If the Examiner has any questions or comments or otherwise feels it would be helpful, he is encouraged to telephone the undersigned at (713) 238-8044.

Respectfully submitted,



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## MARKED-UP VERSION OF CLAIMS

### In the Claims:

1. (Once Amended) A well drilling and servicing fluid which can be continuously circulated in a borehole comprising an aqueous liquid, a polymer which increase the low shear rate viscosity of the fluid to the extent that the thixotropic index of the fluid is at least 10, a surfactant, and aphrons which are generated by the encapsulation of gas in a fluid by a thin aqueous surfactant-containing shell wherein the surfactant molecules are so positioned that they produce an effective barrier against coalescence with adjacent aphrons, the fluid containing less than about [15%] 11% by volume of aphrons.
4. (Once Amended) A recirculateable drilling fluid, comprising:  
an aqueous liquid [:];  
a viscosifier that increases the low shear rate viscosity of the fluid to the extent that the shear thinning index of the fluid is at least 10;  
a surfactant; and  
aphrons, wherein the aphrons comprise less than about [15%] 11% by volume of the fluid.
5. (Once Amended) A recirculateable drilling fluid according to claim 4 wherein the aphrons comprise [11%] less than about 6.5% by volume of the aphrons.
6. (Once Amended) A recirculateable servicing fluid, comprising:  
an aqueous liquid[:];  
a viscosifier that increases the low shear rate viscosity of the fluid to the extent that the shear thinning index of the fluid is at least 10;  
a surfactant; and  
aphrons, wherein the aphrons comprise less than about [15%] 11% by volume of the fluid.

7. (Once Amended) A recirculateable servicing fluid according to claim 6 wherein the aphrons comprise [11%] less than about 6.5% by volume of the aphrons.
8. (Once Amended) The drilling or servicing fluid according to claims 4 or 6 wherein the aphrons [comprise less than about 6.5% by volume of the fluid] prevent loss of excess fluid in a formation.
10. (Once Amended) The drilling or servicing fluid according to claims 4 or 6 wherein the [fluid has a low shear rate viscosity of at least 10,000 centipoise] aphrons effectively seal a formation.
14. (Once Amended) A drilling fluid, comprising:  
an aqueous liquid[:];  
a viscosifier that creates a low shear rate viscosity in the fluid;  
a surfactant; and  
aphrons.
16. (Once Amended) A servicing fluid, comprising:  
an aqueous liquid[:];  
a viscosifier that creates a low shear rate viscosity in the fluid;  
a surfactant; and  
aphrons.
18. (Once Amended) The drilling or servicing fluid according to claims 14 or 16 wherein the [aphrons comprise less than about 15% by volume of the] fluid is recirculateable.

New Claims:

- 22. The drilling fluid of claim 21 wherein the polymer is a biopolymer. --

- 23. The drilling fluid of claim 14 wherein the surfactant molecules are so positioned that they produce an effective barrier against coalescence with adjacent aphrons. --
- 24. The drilling fluid of claim 21 wherein the aphrons comprise less than about 11% by volume of the fluid. --
- 25. The drilling fluid of claim 21 wherein the aphrons comprise less than about 6.5% by volume of the fluid. --
- 26. The drilling fluid of claim 21 wherein the fluid is recirculateable. --
- 27. The drilling fluid of claim 26 wherein the polymer increases the low shear rate viscosity of the fluid to the extent that the thixotropic index of the fluid is at least 10. --
- 28. The drilling fluid of claim 27 wherein the aphrons comprise less than about 11% by volume of the fluid. --
- 29. The drilling fluid of claim 27 wherein the aphrons comprise less than about 6.5% by volume of the fluid. --
- 30. The drilling fluid of claim 14 wherein the aphrons prevent loss of excess drilling fluid in a formation. --
- 31. The drilling fluid of claim 14 wherein the aphrons effectively seal a formation. --
- 32. The servicing fluid of claim 21 wherein the polymer is a biopolymer. --
- 33. The servicing fluid of claim 16 wherein the surfactant molecules are so positioned that they produce an effective barrier against coalescence with adjacent aphrons. --
- 34. The servicing fluid of claim 21 wherein the aphrons comprise less than about 11% by volume of the fluid. --
- 35. The servicing fluid of claim 21 wherein the aphrons comprise less than about 6.5% by volume of the fluid. --

- 36. The servicing fluid of claim 21 wherein the fluid is recirculateable. --
- 37. The servicing fluid of claim 36 wherein the polymer increases the low shear rate viscosity of the fluid to the extent that the thixotropic index of the fluid is at least 10. --
- 38. The servicing fluid of claim 37 wherein the aphrons comprise less than about 11% by volume of the fluid. --
- 39. The servicing fluid of claim 37 wherein the aphrons comprise less than about 6.5% by volume of the fluid. --
- 40. The servicing fluid of claim 16 wherein the aphrons prevent loss of excess servicing fluid in a formation. --
- 41. The servicing fluid of claim 16 wherein the aphrons effectively seal a formation. --